

CLAIMS

Claim 33: (Currently Amended): An asphalt surface repair apparatus comprising:
a vehicle road repair system that includes:
 a heating gas source that includes liquid petroleum gas (LPG);
 at least one liquid petroleum gas (LPG) heater carried by the vehicle and adapted to be moved towards and away from the surface to be repaired;
 a hot new asphalt source;
 a rejuvenating liquid source;
 a rejuvenating liquid dispenser; and
 a sensor for sensing the distance between the at least one heater and the surface to be repaired so that the heating can be controlled by the proximity to the surface to be repaired,
 wherein liquid petroleum gas is supplied through a vaporizer system to form an air/gas premix prior to ignition;
 wherein the at least one heater is capable of heating to a depth of 10 mm to 100 mm from the surface to be repaired to an average temperature of 50° C to 200° C for from 5 to 20 minutes by an infrared output that prevents burning of the surface that includes a binder having asphaltenes so that the asphaltenes of the binder are not destroyed.

Claim 34: (previously presented): The apparatus of claim 33, wherein the at least one heater is mounted to the rear portion of the vehicle for pivotal articulation relative to an adjoining structure of the vehicle for moving the at least one heater towards and away from the surface to be repaired.

Claim 36: (previously presented): The apparatus of claim 33, wherein a heater blanket is made of an electrical resistance steel that includes iron, chromium, aluminum, and yttrium.

Claim 40: (previously presented): The apparatus of claim 33, further comprising:
 a controller for controlling an on/off operation of the at least one heater; and
 wherein the controller turns on the at least one heater when the sensor senses the at least one heater is approximate to the surface to be repaired; and

wherein the controller turns off the at least one heater when the sensor senses the at least one heater is not approximate to the surface to be repaired.

Claim 41: (previously presented): The apparatus of claim 33, further comprising a storage compartment for storing tools and equipment, a compaction roller, or both.

Claim 53: (previously presented): The apparatus of claim 33, wherein the at least one heater includes a control system located thereon for independent turning on and turning off of the at least one heater.

Claim 59: (Cancelled).

Claim 60: (previously presented): The apparatus of claim 33, further including a rejuvenating liquid source and a hot new asphalt source, wherein the rejuvenating liquid source is located next to the hot new asphalt source so that residual heat from the hot new asphalt source maintains the working temperature of the rejuvenating liquid.

Claim 61: (previously presented): The apparatus of claim 33, wherein the vehicle includes a column for suspending the at least one heater therefrom such that the at least one heater is movable towards and away from the surface to be repaired.

Claim 62: (previously presented): The apparatus of claim 36, wherein:

the apparatus further comprises a storage compartment for storing tools, equipment, and a compaction roller; and

the at least one heater includes a control system located thereon for independent turning on and turning off of the at least one heater.

Claim 63: (currently amended): The apparatus of claim 62, wherein the rejuvenating liquid source is positioned so that residual heat from the hot new asphalt source is may be used to maintain the working temperature of the rejuvenating liquid.

Claim 64: (currently amended): The apparatus of claim 62, wherein the vehicle includes a column for suspending the at least one heater therefrom such that the at least one heater is movable moved_towards and away from the surface to be repaired.

Claim 65: (previously presented): The apparatus of claim 62, wherein the at least one heater produces an infrared output having a medium wave output that prevents burning of the surface that includes a binder having asphaltenes so that the asphaltenes of the binder are not destroyed.